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hospitable 'fellowship' thus extended to him at Washington by Professor Henry and Professor Baird. But its value lay in the acquaintance with scientific men and in the free access to specimens. The reduction of Washington board bills was a mere incident. One duty of the Carnegie Institution should be to make the scientific resources of the Capital available to those who can use them.

In this connection the word scientific should have the broadest definition. It should include historical, economic, literary and linguistic research, all that has a foundation in exact methods.

DAVID STARR JORDAN.

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*THE IMPENDING CRISIS IN THE HISTORY  
OF THE MARINE BIOLOGICAL  
LABORATORY.*

THE action of the corporation of the Marine Biological Laboratory, at its recent meeting, August 12, leaves the fate of the laboratory to be decided by the trustees of the Carnegie Institution. It was not a welcome step to surrender the laboratory, but the financial situation seemed to offer no other solution. Some felt very strongly that further deliberation was much needed, but there was danger that delay would prejudice our case with the Carnegie trustees. Compulsory as were the circumstances, it is certain that the corporation and the trustees would have said no to the proposition to surrender, had they felt that our work and plans for the development of a biological center of a national character would thereby be hampered or curtailed. As the matter now stands, it only remains for the trustees of the Carnegie Institution to decide whether they will consummate the steps already taken towards acquiring the laboratory and making it a 'department' of the institution.

In spite of the assurances to the contrary which we have received through one or

two of our trustees, I think we may already see that the organization of the Carnegie Institution will necessarily limit our freedom of action and perhaps deprive us of the most essential thing in our independence, namely, *the power to decide upon the nature and scope of our work*. Had such a danger been seen even as a possibility, it is doubtful if the corporation could have been persuaded to transfer the ownership of the laboratory; and had it been seen as a probability, it is certain, I believe, that the vote to transfer would never have passed.

The vote was essentially a vote of confidence in our hoped-for supporters. Only our part of the situation was entirely definite. What the Carnegie Institution would develop as an organization was too largely a matter of conjecture to permit of clear vision. Some points had come out in personal conferences with members of the Carnegie executive committee, but these had not been definitely enough formulated to bring before the corporation. The visible portion of the situation was a debt of about \$10,000, doubled by the purchase of land just completed, and an offer of money-relief, contingent on a complete surrender of property rights. It was known, of course, that the transfer of property would make the laboratory a 'department' or 'branch' of the Carnegie Institution, centered at Washington. It was not realized that becoming a 'department' might in some fundamental respects endanger our control of the future development of the laboratory. In fact, we were told by some of those who had formulated the scheme of amalgamation that we should lose nothing essential to our independence, while we should gain a permanent support that was 'almost beyond the dream of avarice'! We were told that if we delayed decision, it would look like lack of confidence, and that we might thus lose

not only the support but also the good-will of the Carnegie trustees. Unripe as the situation was, and unprepared as the corporation was for the final action, circumstances were so compelling that we said no to our doubts and preferences and yes to the Carnegie offer.

Although we have neither asked nor received any guarantees that our freedom of development shall remain unimpaired, it is nevertheless certain that our 'yes' implied trust in the fulfillment of this condition. Few of us, perhaps, had reflected upon the situation sufficiently to realize that barriers might intervene between trust and fulfillment which could not have been anticipated on either side at first. An organization once inaugurated on a permanent endowment is a thing of power. It holds even its authors to a logical development. It becomes law to them and to all who have accepted its authority. The organization of the Carnegie Institution is still *in ovo* in many respects, but as it gradually unfolds it will create classifications and standards to which departments and future developments will have to conform. It is conceivable, even certain I think, that the nature and scope of our plans for development have not been fully grasped by the Carnegie trustees. Can we expect them to shape their organization in such a way as to leave us masters of our own development? If they do not do this, what becomes of the 'trust' and the 'fulfillment'?

We may have the fullest trust in the men behind an organization, and the deepest distrust of the influence which the organization will have on the development of our plans. The organization which they create will define their policy and attitude towards all departments. It will control them and us, and decide for us all what departments shall receive support, and where they shall be located. It requires

no prophetic vision to predict that the part will not assimilate the whole.

Hitherto we have been independent. That means that we have been a whole, with the center of interest and the center of authority at Wood's Holl. No one could dispute with us our right to say what departments of biology should be represented here. We could follow our own ideals to the extent of ability and means. All directions of development were open to us. All avenues of support were ours to cultivate and make tributary to an unfettered enterprise. It was on this independence as a foundation that our interests in the present and faith in the future rested. It was the same foundation that sustained the cooperative spirit and the national character of the laboratory. It was our ground of appeal in all emergencies, and the basis of every claim to a wide financial support, the first realizations of which were already at our doors.

The proposition to merge the laboratory in another institution after a fifteen years' struggle for independent existence, at a moment when a strong financial support was on the point of realization, could hardly be expected to satisfy those who had led the struggle, or those who had given the cause unrequited aid and never-failing sympathy. I venture to say that the personal sacrifices already made in the development of the laboratory, the work it has done in research and instruction, the example it has given of the efficacy of cooperation in science, the ideals it has upheld, the national character of its organization, the promising increase of its financial support, all entitle it to hold its independence above any price.

Our attitude towards the proposition has been determined mainly by the desire to secure an immediate and permanent support. While we all agree in the desire, we certainly do not all agree that we can sur-

render the independence of the laboratory with either honor or safety.

It is an undeniable fact that we should all much prefer to have the needed support come to the laboratory rather than see the laboratory go to the support. Why should the support, if it be deserved, not be given to the laboratory, rather than the laboratory to it? Would not the first alternative accord with the declared policy of the Carnegie Institution better than the second? and would it not also better accord with the judgment and expectations of men of science?

It is due to the trustees of the Carnegie Institution to say that the proposition to acquire the laboratory as a condition to supporting it did not originate with them. This is the humiliating side of the situation in which we now find ourselves. They were told that the laboratory was in dire financial distress, that some local western institution was machinating to get possession; in short, that there was an emergency requiring immediate action to save the institution. They were asked on what terms they would consent to own and support it.

When at the conference with the Carnegie Committee the question was asked if they would be willing to support the laboratory without owning it, the reply was that they should have *preferred to give support without taking the whole responsibility of ownership*. It was the 'emergency' that induced them to make the offer of support contingent on our surrender of the ownership to them. It was made clear to us, however, that support without ownership might be considerably less than support with ownership, and that it would have to take the form of a grant to run for a limited time, which might or might not be renewed.

The practical question for us then is: Is our independence plus the possible support by grant from the Carnegie Institution plus the possible outside support, of greater mo-

ment to us than a permanent support minus independence and minus outside support? The four elements when taken in the combinations given should be ranked, I believe, in the following order: (1) Independence, (2) outside support, (3) grants, (4) contingent permanent support. Holding independence first, contingent permanent support, which excludes it, must be placed at the foot of the list, as the last resort. The other two elements stand for unknown sums that may be realized on the basis of independence. Outside support, including (1) a definite annual gift pledged for a series of years, (2) cooperative subscriptions from universities, colleges and societies, and (3) individual donations, may be estimated at from \$10,000 to \$15,000 a year, with prospect of indefinite increase from year to year.

In deciding a question that involves the whole future of the laboratory, it is but the part of wisdom to take a long look ahead. A source of unlimited support, that has an ever-improving prospect for increase, must count for more in the long run than the largest sum to be expected from the Carnegie Institution. Starting with \$10,000, which was the annual donation pledged for five years at the beginning of this year, it is next to certain that this sum could have been increased to \$20,000 within three to five years. That sum once reached, would not be henceforth a non-growing quantity, shutting out possibilities of endowment and further donations, but rather one with ever-improving chances of enlargement.

This unlimited prospective growth of our present support is as much a certainty as that we shall deserve it. With this growth the cooperative policy hitherto cultivated will remain the best guarantee of the national character of the laboratory. We cannot afford to relinquish the possibilities before us for the sake of an immediate relief which is far from being equal to a per-

manent laboratory, and which, if accepted with all the conditions implied, will prove only a temporary relief, barring the way for greater assistance.

What is \$20,000 a year for an all-the-year station, when we are now spending at least \$13,000 for a summer's work? If Dr. Dohrn requires not less than \$40,000 to \$50,000 to meet the annual expenses of the Naples Station, with an average of not over twenty-five investigators, the same plant here would cost about double that sum. At Naples they can charge \$500 a year for a single investigator's table. Here there are too many free laboratories to admit of any price on our tables. Moreover, we have to provide for three times as many investigators as they have at Naples, at least for the summer months.

The glowing anticipations of a permanent laboratory rivaling anything in the world, with which we have been regaled, rise far above the \$20,000 a year. For the present, at any rate, they are but *châteaux en Espagne*, calculated only to console a premature optimism, which can forsake the larger weal in the distance for the nearer allurement that fetters and mortgages the whole future.

Much as we need now, we have larger needs ahead, for which all avenues of support should be kept permanently open. The support that is given to support, that has the potentials of unlimited growth, that asks not to possess, but only to promote, is something incomparably more precious than any support to which is prefixed the *sine qua non* of absolute possession and authority. It is more precious, not only for all the qualities of disinterested beneficence, but also for the reason that it is essentially cooperative in character, and is thus in harmony with the policy of the laboratory.

Cooperation has been the law and the gospel of our whole scheme of organization.

It is the one thing that has given the laboratory unique distinction among marine stations. The prime condition of honest and effective cooperation is an independent organization, representing fairly all interests concerned. Independence has therefore been no meaningless word with us, and hitherto no embarrassments of poverty have tempted us to purchase relief through annexation to another institution.

It is difficult to see how independence can be exchanged for money and cooperation still remain unimpaired. Cooperative support and independence will certainly go, as they have come, together. Can we lose cooperative support and yet keep the cooperative spirit? We can hardly expect to perform the miracle of separating body and spirit.

Cooperative support is a means to an end. It presupposes need, and its realization is possible only under inviting conditions and persistent cultivation. The need alone cannot call it into activity; independence alone cannot bring it forth; and cultivation has no point without the need, and no hope of success under conditions that abridge either the motives or the purposes in view.

The 'atmosphere' or 'spirit' that prevails in the laboratory emanates chiefly from the interaction of sympathies enlisted in a common cause. Cause, responsibility, free initiative, free development, untrammeled policy, all go with independence. The surrender of the ownership of the laboratory reduces it at once to the level of an annex, subordinates its individuality, strips it of final authority, robs it of power to control its own destiny, and subjects its present owners permanently to the condition of petitioners.

If the situation has been fairly stated in its essentials; if the history of the laboratory points the way to its future welfare; if support is deserved at no sacrifice of

independence; if to aid without taking possession would accord with the policy of the Carnegie Institution as well as with the preference of the laboratory people; if this would better meet the expectations of men of science generally, then the trust we have placed in the Carnegie trustees will surely find its best justification in the suggested modification of their proposition to us.

C. O. WHITMAN.

*ADDRESS OF THE PRESIDENT OF THE  
BRITISH ASSOCIATION FOR THE AD-  
VANCEMENT OF SCIENCE.\**

I.

THE members of an association whose studies involve perpetual contemplation of settled law and ordered evolution, whose objects are to seek patiently for the truth of things and to extend the dominion of man over the forces of nature, are even more deeply pledged than other men to loyalty to the Crown and the Constitution which procure for them the essential conditions of calm security and social stability. I am confident that I express the sentiments of all now before me when I say that to our loyal respect for his high office we add a warmer feeling of loyalty and attachment to the person of our Gracious Sovereign. It is the peculiar felicity of the British Association that, since its foundation seventy-one years ago, it has always been easy and natural to cherish both these sentiments, which indeed can never be dissociated without peril. At this, our second meeting held under the present reign, these sentiments are realized all the more vividly, because, in common with the whole empire, we have recently passed through a period of acute apprehension, followed by the uplifting of a national deliverance. The splendid and imposing coronation cere-

\* Given on September 10, at the Belfast meeting.

mony which took place just a month ago was rendered doubly impressive both for the King and his people by the universal consciousness that it was also a service of thanksgiving for escape from imminent peril. In offering to His Majesty our most hearty congratulations upon his singularly rapid recovery from a dangerous illness, we rejoice to think that the nation has received gratifying evidence of the vigor of his constitution, and may, with confidence more assured than before, pray that he may have length of happy and prosperous days. No one in his wide dominions is more competent than the King to realize how much he owes, not only to the skill of his surgeons, but also to the equipment which has been placed in their hands as the combined result of scientific investigation in many and diverse directions. He has already displayed a profound and sagacious interest in the discovery of methods for dealing with some of the most intractable maladies that still baffle scientific penetration; nor can we doubt that this interest extends to other forms of scientific investigation, more directly connected with the amelioration of the lot of the healthy than with the relief of the sick. Heredity imposes obligations and also confers aptitude for their discharge. If His Majesty's royal mother throughout her long and beneficent reign set him a splendid example of devotion to the burdensome labors of State which must necessarily absorb the chief part of his energies, his father no less clearly indicated the great part he may play in the encouragement of science. Intelligent appreciation of scientific work and needs is not less but more necessary in the highest quarters to-day than it was forty-three years ago, when His Royal Highness the Prince Consort brought the matter before this Association in the following memorable passage in his Presidential Address: